

ENTOMOLOGICAL REPORT OF THE INSECT CONTROL PROJECT,  
CRATER LAKE NATIONAL PARK, OREGON  
SEASON SPRING 1929

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The general plan of protecting the lodgepole pine in the more valuable stands south of Crater Lake from destruction by the mountain pine beetle was started in the spring of 1925. At that time clean-up work was undertaken at the East Entrance, in Pinnacle Valley, Kerr Valley, Munson Valley and Anna Spring.

At that time there existed a tremendous infestation north of the Lake in the Park and adjacent National Forest areas. This infestation was so large that it was at once evident that it had passed the point where control work would be of any benefit.

The plan of attack, then was to treat the more isolated areas south of the Lake, and if possible protect them from invasion from the north until the aggressive infestation north of the Lake had run its course.

This plan of control was continued during 1926 and 1927 and the same areas treated in 1925 were again cleaned of infestation, which had drifted in and was tending to build up in these areas. No work was undertaken in 1928, as the situation appeared to be well in hand.

However, with the fall survey of 1928, made by the writer, it became evident that there had been considerable infiltration of beetles from north of the Lake, as well as a building-up of the infestation locally during the year when no work was done. At that time it was estimated that there were 4500 infested trees on the control areas south of the Lake. As the control work progressed in the spring of 1929, this estimate was found to fall far short of the actual number of infested trees which had to be treated on the area.

This was due in large measure to the activity of the beetles during the 1928 season. Instead of one annual brood, which has been normal for this area, two broods developed--one during the summer, which emerged adult beetles early enough to attack and infest another set of trees in the late fall. Nor did all the broods emerge from the summer-generation trees, so that in the control work both sets of trees had to be considered. This nearly doubled the number of trees that had to be treated in the spring control work.

Furthermore, there was a heavier immigration of beetles from the epidemic centers north of the Lake than had been expected, which accounted in large measure for the additional epidemic centers which were found late in the season.



Taken as a whole, the occurrences during the 1928 season were most unusual and resulted in an unexpected emergency, which had to be faced when the spring control work got under way.

#### The 1929 Spring Control Work

Chief Ranger Godfrey has very adequately covered the accomplishments of the spring control campaign.

All told, 23,239 infested trees were treated on an area of approximately 9,000 acres, at a total cost of \$17,058.91 and approximately 4,000 trees left untreated on the plateau between the Middle Fork and East Fork of Anna Creek, where a new and virulent center was discovered in June, 1929. These trees were unavoidably left, due to the encroachment of other Park activities and the beginning of beetle flight before they could be reached.

In addition to the work carried on by the Park Service, the Forest Service cooperated by treating 5,199 trees in the Pinnacles Valley Unit on Park lands and about 3,000 trees on the adjoining National Forest areas. The cost to the Forest Service for the work on National Forest lands was about \$2,000.

The method of treatment was that used in previous years, and consisted of felling the trees, usually in a north and south direction, trimming off the limbs and exposing the trunks to the direct rays of the sun. The heat so generated under the bark was sufficient to kill the beetle broods in all stages of development. After a few days of "sun-curing" the crews returned and turned the logs completely over, and the other half was exposed to the sun treatment. This method has proven very effective in killing the broods in this region and has the advantage of not scorching the adjacent living trees, as is the case when the logs are burned.

The work was very efficiently done and the unit cost was much less than any work so far undertaken in the Park. The low cost of 74 cents per tree was made possible by the heavier concentration of infestation on the areas worked; the possibility of using large crews with lowered overhead costs; and the efficient organization and direction of the control crews.

#### Results of the Work

A survey was made by Keen in the fall of 1929 which showed that the control work had been uniformly successful in bringing about an eighty to ninety per cent reduction on the areas worked.

There is the danger, however, of the beetles again coming in from untreated areas and building up from the few trees missed in the control work, so that there is the necessity of continuing the protection of these valuable scenic and recreational areas south of the Lake for several more years, until the epidemic on uncontrolled areas has run its course and no longer threatens the protected areas. Three or four more years should see the end of the present epidemic in the outlying areas, as there is very little lodgepole left alive in these areas for the beetles to kill.